REMARKS

The Office Action mailed January 29, 2003 has been reviewed and carefully considered. Claims 1-16 are pending, claims 1, 7, 10 and 16 being the independent claims. Claims 10-12 have been amended. The Examiner's indication of allowable subject matter for claim 9 is appreciated. Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested.

Claims 11 and 12 were objected for alleged lack of antecedent basis, and have now been amended to clearly provide such basis.

Claims 1, 4, 5, 7, 10, 13 and 14 were rejected under 35 U.S.C. 102(b) as allegedly anticipated by U.S. Patent No. 5,151,608 to Torii et al. ("Torii").

Claim 1 recites "a predetermined reference image." The Torii reference, by contrast, fails to disclose a reference image.

Item 3 of the Office Action, as best as can be determined by applicant, perhaps suggests that a reference image is to be found in "Col. 6, lines 20-35" or "Col. 7, lines 48-54."

The cited passages in Torii, however, do not even hint at a reference image. The col. 7 passage mentions a image of a groove or weld-line on the workpiece. The col. 6 passage mentions a reference "value" or threshold to which CCD output levels are compared. If the level is lower than the threshold, it is assumed to have been produced by "higher-order reflected light other than the secondary reflected light" (col. 6, lines 53-

55) and is excluded. The reference value in Torii is not an image. Claim 1 is not anticipated by Torii for at least this reason.

Claim 7 recites "converting said detected lateral shift into a corresponding vertical distance." The lateral shift is that of a light beam.

Torii, by contrast, does not disclose a lateral shift of a light beam. Instead, the scanning beam in Torii is rotated by operation of mirror 2 by control circuit 20. Moreover, claim 7 requires "converting said . . . lateral shift into a corresponding vertical distance." No converting of a lateral shift of a light beam occurs in Torii workpiece distance computation. For at least these reasons, Torii fails to anticipate claim 7.

As to claim 10 as amended, it, like claim 1, recites a reference image and is likewise deemed to be patentable over the cited reference.

Claims 2, 6, 8, 11 and 15 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Torii.

These claims depend from base claims 1, 7 and 10, respectively. Torii fails to disclose or suggest limitations of each base claim, as described above, and the dependent claims are deemed to likewise be patentable for at least this reason.

Claim 16 was rejected under 35 U.S.C 103(a) as allegedly unpatentable over U.S. Patent No. 4,335,942 to Tsunekawa et al. ("Tsunekawa").

Item 6 of the Office Action concedes that Tsunekawa fails to disclose the first two projecting steps.

Claim 16 further recites "using . . . to provide an indication of distance between said first and second images received by said workpiece."

First, Tsunekawa does not even disclose a workpiece. This attorney can not think of a camera that has one, and Tsunekawa is directed to a camera. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Therefore, for this reason alone, the reference fails to render obvious claim 16.

Second, item 6 of the Office Action suggests that IM1 and IB1 are the first and second images, and the reference fails to "provide an indication of distance" between them.

Claim 16 further recites that the vertical position of the workpiece is adjusted, but the Tsunekawa camera doesn't move the workpiece. Nor is a workpiece even disclosed.

For at least all of the above reasons, claim 16 is not rendered obvious by the cited reference.

Claim 9 was objected to for dependence from a rejected claim, but was indicated by the Examiner to be allowable if redrafted into independent form. Since claim 9 depends from claim 7 which has been shown to be patentable, claim 9 is likewise patentable.

In view of the foregoing amendments and remarks, it is believed that this application is now in condition for allowance. The Examiner is invited to contact the undersigned in the event of any perceived outstanding issues so that passage of the case to issue can be effected without the need for a further Office Action.

Respectfully submitted,

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AMENDMENT TO CLAIMS SHOWING CHANGES

Please amend claims 10-12 as follows:

10. (Twice Amended) A positioning system for use in adjusting the position of a workpiece, comprising:

a light generating means for projecting a light beam onto the top surface of said workpiece at a predetermined angle;

a video capturing means for detecting the light beam received on said workpiece and for converting said detected light beam into electrical signals; and,

a computer means for processing a deviation direction and a deviation amount based on said detected light beam shifted on the surface of said workpiece and a predetermined reference image.

11. (Amended) The system of claim 10, further comprising a means for releasably holding said workpiece in a substantially horizontal orientation and for moving said workpiece horizontally in ~~the~~an X-Y plane to a preselected position.

12. (Amended) The system of claim 1~~1~~0, wherein ~~the~~said holding means is adapted to vertically displace said workpiece so that the detected light received by said workpiece matches said predetermined image.